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COLLIER SHANNON SCOTT, PLLC  
3050 K STREET, NW  
SUITE 400  
WASHINGTON, DC 20007

EXAMINER

TWEEL JR, JOHN ALEXANDER

ART UNIT PAPER NUMBER

2632

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/988,376

Applicant(s)

DERRINGER, BYRON SCOTT

Examiner

John A. Tweel, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 November 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### ***Specification***

2. The disclosure is objected to because of the following informalities:
- Paragraph 6, Line 3: The word "and" before "apparatus" is incorrect. The word --an-- should be used.
  - Paragraph 15, Line 3: It appears a word such as --of-- is needed before "novel apparatus".
  - Paragraph 29, Line 3: A space is needed between "processor" and "apparatus".
  - Paragraph 31, Line 3: An extra phrase "or objects" is included in this line.
  - Paragraph 35, Line 1: The word "present" has been repeated in this line.
  - Paragraph 51, Line 1: The word --dimensional-- has been misspelled.
  - Paragraph 52, Line 1: The word --dimensionally-- has been misspelled.

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- Paragraph 52, Line 2: The word "parameter" appears incorrect. Should this read --perimeter--?
- Paragraph 57, Line 2: An article such as --a-- is needed before "laser beam configuration". This error is present throughout the entire brief description of the drawings.
- Paragraph 58, Line 2: The phrase "where optical laser" is grammatically incorrect. Either the word "laser" should be plural or a word such as --an-- should be inserted before "optical laser".
- Paragraph 59, Line 2: See the note regarding Paragraph 57 above.
- Paragraph 61, Line 2: See the note regarding Paragraph 57 above.
- Paragraph 62, Line 2: See the note regarding Paragraph 57 above.
- Paragraph 63, Line 3: The word "beam" should be plural to agree with the verb --are--.
- Paragraph 65, Line 3: See the note regarding Paragraph 57 above.
- Paragraph 65, Line 4: See the note regarding Paragraph 63 above.
- Paragraph 66, Line 2: See the note regarding Paragraph 58 above.
- Paragraph 67, Line 2: See the note regarding Paragraph 57 above.
- Paragraph 68, Line 2: See the note regarding Paragraph 58 above.
- Paragraph 69, Line 2: See the note regarding Paragraph 57 above.
- Paragraph 71, Line 2: See the note regarding Paragraph 57 above.
- Paragraph 79, Line 3: An article such as --the-- or --a-- is needed before "specified area".

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- Paragraph 80, Line 2: See the note regarding Paragraph 58 above.
- Paragraph 84, Line 1: An extraneous slash is included before "FIG. 22".
- Paragraph 87, Lines 3-5: The sentence beginning "Illustrating" is a fragment.
- Paragraph 88, Lines 3-5: The sentence beginning "Illustrating" is a fragment.
- Paragraph 92, Line 1: A word such as --the-- or --an-- is needed before "optical laser embodiment".
- Paragraph 94, Line 1: See the note regarding Paragraph 92 above.
- Paragraph 96, Line 1: See the note regarding Paragraph 92 above.
- Paragraph 114, Line 10: The word "present" appears incorrect. The word --presence-- would be more proper.
- Paragraph 116, Line 1: The word --dimensional-- has been misspelled.
- Paragraph 118, Line 1: The word --dimensional-- has been misspelled.
- Paragraph 118, Lines 2-3: The specification states "show optical laser embodiments". Is there anyone in particular I should show them to?
- Paragraph 125, Line 2: A word such as --of-- is needed before "the supporting mechanism".
- Paragraph 125, Lines 3 and 4: A word such as --the-- is needed before both "runway surface" and "supporting mechanism".
- Paragraph 129, Line 2: Figure 12 depicts laser transceivers at both ends of the runway. The word "section" should therefore be plural.

Appropriate correction is required.

***Claim Objections***

3. Claims 20 and 28 are objected to because of the following informalities: Claim 20, Line 4 contains a misspelling of the word --or--. Claim 28, Line 4 contains a misspelling of the word --or--. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-41 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Nowhere in the specification is there any discussion of exactly how the processing equipment determines the proximity of an object relative to the location of an aircraft. In fact, no aircraft appears anywhere in the drawings. All that is included or defined in the drawings and specification with any sort of specificity are the physical configurations of the optical transmitters, receivers, transceivers, and reflectors with respect to one another.

Further, merely stating that apparatus such as the object characterizer, intrusion sensor, motion processor, and output inspector diagnostic system are included is not sufficient to merit patentability. The specification is replete with a myriad of physical setups in which transmitters and transceivers and their associated receivers and

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reflectors are situated, and the Examiner recognizes that signals are certainly sent from these optical apparatus to the processing equipment. However, what exactly is done with these signals remains a mystery. How does the object characterizer determine what type of object is present (i.e. is the system time-based? Velocity-based? Are there certain physical parameters the detected object must meet in order to merit an alarm? If so, what are they? What parameters correspond with what type of alarm?) What exactly does the operation sensor detection system and output inspector diagnostic system do? How is the height of the optical sensor system changed? Merely showing two different positions in the drawing package is not enough. The current application is a slight improvement over the Inventor's previous application, but many questions still remain.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-9, 11-15, 19-24, 27-30, and 33-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mehnert** [U.S. 4,319,332].

For claim 1, the apparatus for detecting objects taught by **Mehnert** includes the following claimed subject matter, as noted, 1) the claimed optical system is taught by the directional beam transmitter (No. 100), 2) the claimed object location processor, 3)

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the claimed object characterizer, and 4) the claimed alarm activation processor is met by the central computer (No. 200) which determines the location of an object (Col 6, Lns. 25-31), the type of object (Col. 8, Lns. 21-29), and sends coded signals to activate condition reports and alarm reports (Col. 14, Lns. 9-14), and 5) the claimed alarm generator and 6) user interface is met by the output unit (No. 407) that depicts condition reports regarding the monitored terrain, changes in the terrain, coordinates and other data with respect to detected objects, and alarm signals. The specification does not specifically state a user interface; however, the use of known indicator devices and/or alarm devices is mentioned (Col. 16, Lns. 6-8). Computer interfaces allowing personnel to view different types of data are well within this purview. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a user interface as such interfaces have been used for some time in alarm and alerting apparatus.

For claim 2, the claimed transmitter is met by the pulse transmitter (No. 112) and the claimed receiver is met by the receiver (No. 125).

For claim 3, the transmitter (No. 112) and receiver (No. 125) form a transceiving unit and the claimed reflectors are met by the retro-reflectors (Nos. 501, 508, 509, 510).

For claim 4, the claimed reflectors are met by the retro-reflectors.

For claim 5, the transmitter (No. 112) and receiver (No. 125) form a transceiving unit.

For claim 6, the system of **Mehnert** detects intrusions (Col. 3, Lns. 48-51).



For claim 7, it is unknown from the disclosure how the operation sensor detection system actually works. The sensing of debris and the issuance of condition reports as pertains the system of Mehnert certainly detects operation of the sensor system.

For claim 8, sensing and producing condition reports found in **Mehnert** certainly assists in diagnosing the output of the optical system.

For claim 9, the system of **Mehnert** is able to determine the movement of the object (Col. 8, Lns. 17-21).

For claim 11, graphical interfaces, as mentioned in claim 1, are quite common and well known in indicator and alarm devices. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include such a graphical interface as these have been in use and are well known in alerting systems.

For claims 12-14, the output unit (No. 407) of **Mehnert** displays information and data regarding certain objects and alarm signals. To assign a degree of severity of alert is not new in alerting systems. Furthermore, one improved aspect of the present system is to reduce the number of false alarms present in prior art systems (Col. 3, Lns. 3-11).

For claim 15, Figure 4 of **Mehnert** depicts a support mechanism for the optical system.

For claim 19, Figure 5 of the **Mehnert** reference depicts a cover over the optical transceiving unit.

For claim 20, the apparatus for detecting objects taught by **Mehnert** includes the following claimed subject matter, as noted, 1) the claimed optical system is taught by

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the directional beam transmitter (No. 100) comprising an optical transmitter (No. 112) and an optical receiver (No. 125), 2) the claimed object location processor, 3) the claimed object characterizer, and 4) the claimed alarm activation processor is met by the central computer (No. 200) which determines the location of an object (Col 6, Lns. 25-31), the type of object (Col. 8, Lns. 21-29), and sends coded signals to activate condition reports and alarm reports (Col. 14, Lns. 9-14), and 5) the claimed alarm generator and 6) user interface is met by the output unit (No. 407) that depicts condition reports regarding the monitored terrain, changes in the terrain, coordinates and other data with respect to detected objects, and alarm signals. The specification does not specifically state a user interface; however, the use of known indicator devices and/or alarm devices is mentioned (Col. 16, Lns. 6-8). Computer interfaces allowing personnel to view different types of data are well within this purview. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a user interface as such interfaces have been used for some time in alarm and alerting apparatus.

For claim 21, the system of **Mehnert** detects intrusions (Col. 3, Lns. 48-51).

For claim 22, the system of **Mehnert** is able to determine the movement of the object (Col. 8, Lns. 17-21).

For claim 23, graphical interfaces, as mentioned in claim 1, are quite common and well known in indicator and alarm devices. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include such a graphical interface as these have been in use and are well known in alerting systems.

For claim 24, Figure 4 of **Mehnert** depicts a support mechanism for the optical system.

For claim 27, Figure 5 of the **Mehnert** reference depicts a cover over the optical transceiving unit.

For claim 28, the apparatus for detecting objects taught by **Mehnert** includes the following claimed subject matter, as noted, 1) the claimed optical system is taught by the directional beam transmitter (No. 100) comprising an optical transmitter (No. 112) and an optical receiver (No. 125), 2) the claimed object location processor, 3) the claimed object characterizer, and 4) the claimed alarm activation processor is met by the central computer (No. 200) which determines the location of an object (Col 6, Lns. 25-31) wherein an intrusion is also detected, the type of object (Col. 8, Lns. 21-29) including data regarding the motion and movement of the object, and sends coded signals to activate condition reports and alarm reports (Col. 14, Lns. 9-14), and 5) the claimed alarm generator and 6) user interface is met by the output unit (No. 407) that depicts condition reports regarding the monitored terrain, changes in the terrain, coordinates and other data with respect to detected objects, and alarm signals. The specification does not specifically state a user interface; however, the use of known indicator devices and/or alarm devices is mentioned (Col. 16, Lns. 6-8). Computer interfaces allowing personnel to view different types of data are well within this purview. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a user interface as such interfaces have been used for some time in alarm and alerting apparatus.

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For claim 29, graphical interfaces, as mentioned in claim 1, are quite common and well known in indicator and alarm devices. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include such a graphical interface as these have been in use and are well known in alerting systems.

For claim 30, Figure 4 of **Mehnert** depicts a support mechanism for the optical system.

For claim 33, Figure 5 of the **Mehnert** reference depicts a cover over the optical transceiving unit.

For claim 34, the apparatus for detecting objects taught by **Mehnert** includes an optical laser transmitter (No. 112), an optical laser receiver (No. 125), and an optical laser reflector (No. 501).

For claim 35, the apparatus for detecting objects or other debris taught by **Mehnert** includes an optical laser transmitter (No. 112) arranged to transmit optical lasers across portions of an area, an optical laser receiver (No. 125) arranged to receive the optical lasers, and a central computer (No. 200) to process the signals to determine the presence of an object in the area.

For claim 36, the system further includes reflectors (Nos. 501, 508, 509).

For claim 37, the system of **Mehnert** includes a transceiver unit (Nos. 112 and 125) and one or more reflectors (Nos. 501, 508, 509).

For claim 38, the method for detecting objects taught by **Mehnert** includes the following claimed steps, as noted, 1) the claimed detecting the presence of an object is achieved using the optical laser transmitter (No. 112) and receiver (No. 125) and

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interruption of said laser, 2) the claimed processing the output to determine the location is achieved using the central computer (No. 200) that uses timed output signals to determine the exact location of the object, and 3) the claimed transmitting the information is achieved using the coded signals from the beam emitter for condition and/or alarm reports for display or indication purposes (Col. 14, Lns. 12-14).

For claim 39, the step of processing the output to determine the type of object is read on the specification of **Mehnert** (Col. 8, Lns. 15-29) which state that an object classification or category is determined based on criteria corresponding to the object.

For claim 40, the claimed user interface is read on the specification (Col. 16, Lns. 1-8) stating that information regarding the object and other data may be presented using known indicator and alarm devices. Graphical user interfaces are certainly well known and common indicator devices that have been used in alerting personnel for many years.

For claim 41, the method for detecting objects taught by **Mehnert** includes the following claimed steps, as noted, 1) the claimed detecting the presence of an object is achieved using the optical laser transmitter (No. 112) and receiver (No. 125) and interruption of said laser, 2) the claimed processing the output to determine the location is achieved using the central computer (No. 200) that uses timed output signals to determine the exact location of the object, and 3) the claimed processing the output to determine the type of object is read on the specification of **Mehnert** (Col. 8, Lns. 15-29) which states that an object classification or category is determined based on criteria corresponding to the object, 4) the claimed step of processing the output to determine

the degree of danger posed by the object is mentioned in the Summary of the invention which states that the data collected by the system can be used to determine the nature and significance of the object, and 5) transmitting the information is achieved using the coded signals from the beam emitter for condition and/or alarm reports for display or indication purposes (Col. 14, Lns. 12-14).

8. Claims 16, 17, 25, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mehnert** as applied to claims 1, 20, and 28 above, and further in view of **Byrne** [U.S. 5,554,972].

For claim 16, the system of **Mehnert** includes the claimed subject matter as discussed in the rejection of claims 1 and 15 above. However, there is no mention of adjusting the height of the support mechanism.

The electronic perimeter warning system taught by **Byrne** presents an apparatus similar to the primary reference; that is, a system to prevent the ingress or egress of persons or objects from a selected area. As seen in Figures 2 and 3, two telescoping sections (Nos. 38 and 39) are used to adjust the height of the optical transmitter and receiver. The obvious advantage of this system is to enable the user to adjust the height of the system to correspond to the height of an intruding object, such as a human or other type of object.

Both references pertain to intrusion sensors that use optical beams to determine the presence of an object. As seen in the primary reference, the support of the optical system is very similar to that found in Byrne in that an optical device is set atop a

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vertical support. Selective variation of the height of the optical system allows a user an important choice in determining what types of object are to be detected. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include height adjustment of the optical system in **Mehnert** for the purpose of allowing a user to set the height of the system to better suit their individual needs.

For claim 17, the adjusting means of **Byrne** adjusts the height of the optical system.

For claim 25, the system of **Mehnert** includes the claimed subject matter as discussed in the rejection of claims 20 and 24 above. However, there is no mention of adjusting the height of the support mechanism or optical system.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 16 above.

For claim 31, the system of **Mehnert** includes the claimed subject matter as discussed in the rejection of claims 28 above. However, there is no mention of adjusting the height of the support mechanism or optical system.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 16 above.

9. Claims 18, 26, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mehnert** as applied to claims 1, 20, and 28 above, and further in view of **O'Meara**.

For claim 18, the system of **Mehnert** includes the claimed subject matter as discussed in the rejection of claims 1 and 15 above. However, there is no mention of heating the support mechanism or optical system.

The laser lighting system taught by **O'Meara** includes an optical system that assists in locating markers for navigation. One embodiment shown in Figure 28 includes a heated glass cover for clearing frost and ice from the surface of the optical system so that operation of the optical system is not impaired.

The O'Meara reference is plain evidence that optical systems have used heating to clear the optical channels for proper operation. The primary reference is to be used outdoors where such weather conditions may be experienced. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include heating means in the optical system of Mehnert for the purpose of insuring proper operation in inclement weather.

For claim 26, the system of **Mehnert** includes the claimed subject matter as discussed in the rejection of claims 20 and 24 above. However, there is no mention of heating the support mechanism or optical system.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 18 above.

For claim 32, the system of **Mehnert** includes the claimed subject matter as discussed in the rejection of claims 28 and 31 above. However, there is no mention of heating the support mechanism or optical system.



The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 18 above.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Hedin et al** [U.S. 3,623,057] provides laser beam components for defining a protected perimeter.

**Misek et al** [U.S. 3,641,549] directs pulsed beams to reflectors for an intrusion alarm.

**Todeschini** [U.S. 3,987,428] uses optical lasers in a security system.

**Hsu et al** [U.S. 5,063,288] secures a confined space using laser emission.

**Tilleman** [U.S. 5,680,120] directs beams through the air for a transportation safety apparatus.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. Tweel, Jr. whose telephone number is 703 308 7826. The examiner can normally be reached on M-F 10-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on 703 308 6730. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9314 for regular communications and 703 872 9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305 3900.

JAT  
March 9, 2003

A handwritten signature in black ink, appearing to read 'John Tweel', written in a cursive style.

**JOHN TWEEL  
PRIMARY EXAMINER**